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Research Article

**EXPLORING THE RELATIONSHIPS OF ANTERIOR  
CROWDING AND ORAL HYGIENE**Dr Ayesha Afzaal<sup>1</sup>, Dr Asma Khalid<sup>1</sup>, Dr Sara Ahmad<sup>1</sup><sup>1</sup>House Officer at Punjab Dental Hospital, Lahore

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**Abstract:**

**Introduction and objectives:** There are abundant articles discussing the effect of malocclusion generally or a specific type of malocclusion on the quality of life or self-esteem of patients. The main objective of the study is to explore the relationships of anterior crowding and oral hygiene. **Material and methods:** This cross sectional study was conducted in Punjab Dental Hospital, Lahore during March 2019 to November 2019. The data was collected from 100 patients. The data was collected through OHIP-14 questionnaire after a clinical evaluation of the severity of their spacing or crowding. **Results:** The data was collected from 100 patients. The mean age of the patients was 25.2±5.67 years. The distribution of anterior crowding malocclusion (ACM) and anterior spacing malocclusion (ASM) were divided into mild, moderate, and severe based on the severity of the cases. A trend was observed for both ACM and ASM where those with a mild form of malocclusion were more prevalent followed by moderate and severe forms. **Conclusion:** It is concluded that anterior malocclusion (crowding or spacing) impacts OHRQoL negatively, especially heightening self-consciousness about their appearance. These effects should be addressed by the orthodontist during the course of treatment.

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**INTRODUCTION:**

Oral health-related quality of life (OHRQoL) is defined as “The subjective experience of symptoms related to oral conditions that have an impact on well-being.” There are abundant articles discussing the effect of malocclusion generally or a specific type of malocclusion on the quality of life or self-esteem of patients. The increasing research interest in OHRQoL began only after the shortcomings of previous approaches of treating symptoms only and neglecting the patient’s self-perception were revealed [1]. Some patients with mild malocclusion may report greater concerns than those with severe forms and a different self-perception. OHRQoL involves many aspects such as chewing ability, sleeping, social interactions, self-esteem, and satisfaction with life and oral health [2].

Untreated malocclusion impacts negatively on the quality of life; severe malocclusion often is associated with functional limitation, pain, and social disability that affects the emotional and social well-being of young male and female adolescents. The psychological impact of malocclusion may be strong because of the aesthetic value of the face and smile [3].

Humans make social contacts through the face and smile, and perceptions or distortions of these media of social contact affect self-image and self-esteem negatively [4]. The negative impact of malocclusion on oral health quality of life starts to be perceived when children are 11 to 14 years, the age when they undergo major life changes, and the impact worsens as they grow older [5].

Poor oral health is not uncommon among the population of Pakistan. Mal-alignment of teeth might be one of the many predisposing factors supposed to be responsible for this condition. Irregularities in dentition cause difficulties in the

cleaning of teeth and maintenance of good oral hygiene, therefore prompting to gingivitis and periodontitis. However, there exist contradictions in research findings concerning the relationship between dental irregularity and periodontal disease [6]. These contradictions arise due to difficulty in distinguishing the effects of irregularity from those of other important factors such as social class, gender, motivation, education and family background. The main influence, in addition to other factors, on gingivitis would be through differences in the effectiveness of oral hygiene measures [7].

The main objective of the study is to explore the relationships of anterior crowding and oral hygiene.

**MATERIAL AND METHODS:**

This cross-sectional study was conducted in Punjab Dental Hospital, Lahore during March 2019 to November 2019. The data was collected from 100 patients. The data was collected through OHIP-14 questionnaire after a clinical evaluation of the severity of their spacing or crowding. Data were analyzed using the chi-square test in SPSS statistical package (version 21; SPSS, Chicago, IL, USA). The level of significance was set to <0.05.

**RESULTS:**

The data was collected from 100 patients. The mean age of the patients was  $25.2 \pm 5.67$  years. The distribution of anterior crowding malocclusion (ACM) and anterior spacing malocclusion (ASM) were divided into mild, moderate, and severe based on the severity of the cases. A trend was observed for both ACM and ASM where those with a mild form of malocclusion were more prevalent followed by moderate and severe forms. Upon comparison between crowding and spacing malocclusions, it was found that crowding was a more prevalent malocclusion with 56.5% than spacing, which represents 43.5%.

Table 01: Association between anterior malocclusion and OHIP-14

OHIP-14 daily activity	Crowding	Spacing
Had problems pronouncing words		
Presence of impact	36 (20.6)	47 (35.1)
<i>p</i> -value	0.001*	0.001*
Felt that the sense of taste worsened		
Presence of impact	21 (12.1)	26 (19.4)
<i>p</i> -value	0.001*	0.001*
-Found it uncomfortable to eat any food		
Presence of impact	78 (45.8)	63 (47)
<i>p</i> -value	0.17	0.49
Had been self-conscious		
Presence of impact	79 (45.4)	86 (64.2)
<i>p</i> -value	0.22	0.001*
Felt tense		
Presence of impact	66 (38)	67 (50)
<i>p</i> -value	0.001*	1
Had an unsatisfactory diet		
Presence of impact	39 (22.4)	32 (23.9)
<i>p</i> -value	0.001*	0.001*
Had to interrupt meals		
Presence of impact	38 (21.8)	33 (24.6)
<i>p</i> -value	0.001*	0.001*
Found it difficult to relax		
Presence of impact	41 (23.6)	37 (27.6)
<i>p</i> -value	0.001*	0.001*
Had been a bit embarrassed		
Presence of impact	74 (42.5)	71 (53)
<i>p</i> -value	0.04*	0.49

### DISCUSSION:

The study findings contribute to the debate on the justification for recommending orthodontic treatment to improve oral health in view of conflicting data on the effect of malocclusion on oral health. Like Ngom et al. had opined, the study findings suggest that providing orthodontic treatment reduces the risk for caries and gingivitis in young children [7]. Although suggestions that certain malocclusion traits call only for special professional efforts of oral hygiene education, rather than orthodontic therapy [10], we found that the oral hygiene need of the study population was not limited to those who had malocclusion [8]. Malocclusion may therefore have other direct and or indirect pathways of association with caries and gingivitis beyond oral hygiene practices. There is no conceptual framework that defines these potential pathways, however. More studies are needed to understand how malocclusion predisposes to oral health problems [9].

Level of malocclusion in subjects of this study is comparable with that of Nalcaci et al however, this study reports more severe crowding. No significant difference was observed in crowding between males and females, but females had more severe crowding

than males [10]. This finding agrees with a study by Mugonzibwa et al that reported no statistically significant differences in dental crowding between genders. No significant gender differences were also noted in oral hygiene parameters among cases, families, siblings and parents. Similar finding was also reported by a previous investigation [11].

### CONCLUSION:

It is concluded that anterior malocclusion (crowding or spacing) impacts OHRQoL negatively, especially heightening self-consciousness about their appearance. These effects should be addressed by the orthodontist during the course of treatment.

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